



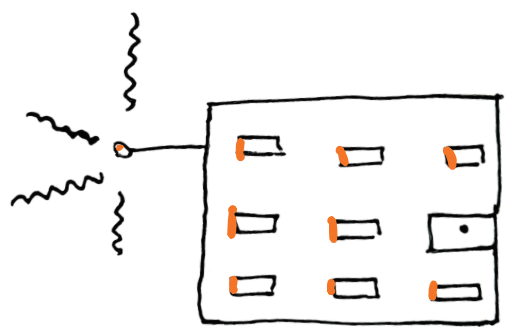
COLLECTIVE

OPEN WAVE-RECEIVER

SHORTWAVE

‘Open Wave-Receivers’ are homemade radios without tuners. They are open to a broad range of frequencies, sometimes received simultaneously. These radios favour AM signals, but have been known to pick up waves from across the electromagnetic spectrum.

Open Wave-Receivers are open to the elements, with parts exposed rather than housed in ubiquitous black boxes. The circuit is open for experimentation, to having parts switched out for alternatives such as found or recycled objects. They can be sculptural and can be literally built into a location.



LISTEN

Shortwave Collective are Alyssa Moxley, Brigitte Hart, Georgia Leigh-Münster, Hannah Kemp-Welch, Lisa Hall, Maria Papadomanolaki, and associate members Karen Werner, Kate Donovan, Meira Asher, Sally A. Applin and Sasha Engelmann.

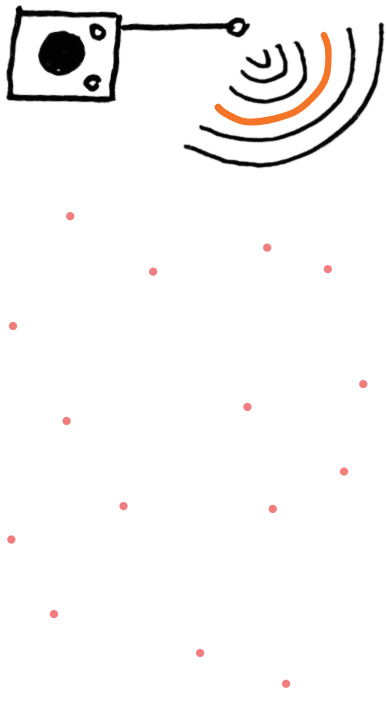
[www.shortwavecollective.net](http://www.shortwavecollective.net)  
[@shortwavecollective](https://twitter.com/shortwavecollective)

OPEN TO THE WAVES

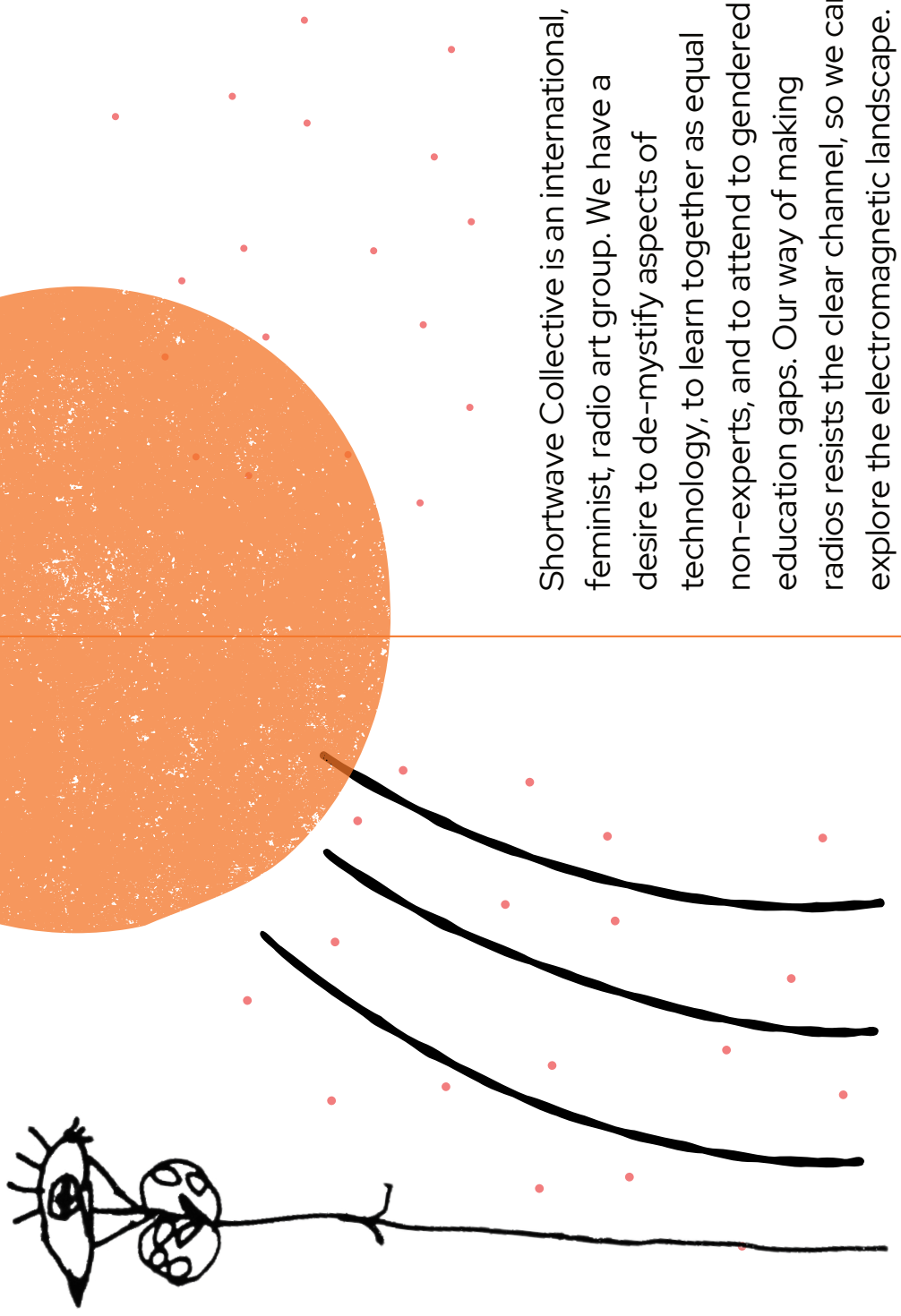
WORKING TOGETHER

LISTENING THROUGH SPACE AND OVER TIME

We also mean ‘open’ as in open access. Open Wave-Receivers have been developed together with others during workshops, with each encounter generating new knowledge and new questions. Why does a tent peg act as the strongest detector? Why does it still work when half the circuit is unplugged?



Shortwave Collective is an international, feminist, radio art group. We have a desire to de-mystify aspects of technology, to learn together as equal non-experts, and to attend to gendered education gaps. Our way of making radios resists the clear channel, so we can explore the electromagnetic landscape.

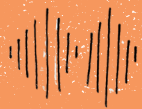


When we listen to the radio spectrum via Open Wave-Receivers, we’re not listening for clarity, strength of signal or certainty. We are interested in the fragile, uncertain pluralities of radio, within the interconnectedness of different spaces, bodies, and materials.

By listening over time, we notice atmospheric and environmental influences on reception. Signals are dependent on our position, the weather, the solar cycle. We think of these devices as part of a larger constellation of bodies, materiality and space, experienced through listening.

We like to listen at dusk and dawn, when distant transmissions are refracted by the ionosphere, and reach across the curvature of the earth. This ‘greyline’ moment makes the time-specificity of radio reception all the more palpable.

We set up radios outdoors and in high up places, noticing topographic changes through listening. We throw antennas in the air and hear a spike in signals as wires cross through different zones of reception. Our hands and bodies can also be part of the circuit, making contact with the otherwise seemingly intangible electromagnetic waves.



## MATERIALS

|                |  |
|----------------|--|
| <b>Antenna</b> | 5-10m wire (mono speaker wire is good)         |
| <b>Board</b>   | Any surface you can stick things to (A5-sized) |
| <b>Clips</b>   | 5 crocodile clips (or bulldog clips + wire)    |
| <b>Coil</b>    | Cardboard tube + 12m of 0.5mm magnet wire      |
| <b>Diode</b>   | Tent peg - or another metal alloy object       |
| <b>Ground</b>  | 1-3m wire (speaker wire or other) + tent peg   |
| <b>Phones</b>  | Mini-jack cable with bare wires (mono)         |
| <b>Speaker</b> | Battery powered speaker - strongest possible   |

### Optional

**Preamp** A field recorder will help to boost signal

## COIL

**Poke** a hole about 1cm into each side of the tube.

**Thread** 5cm of magnet wire through one side, from the outside in. Tape the wire inside the tube to keep it fixed.

**Wrap** your 12m of magnet wire in concentric loops around the cardboard tube from one side to the other. Ideally, the coil should be wrapped tightly and no loops should overlap. Some kinks are inevitable!

**Scrape** the enamel coating off each end of the magnet wire using sandpaper, to make a bare end for your connections.

**Tape** your coil to the board. Stick a crocodile clip onto each stripped end of the wire.

## GROUND

**Cut** 1-3m of wire (if speaker wire, split into mono cables).

**Strip** 5cm of any plastic or other coating off both ends so the wire is exposed.

**Wrap** one end of the exposed wire around a tent peg (it will go into the earth outside) and tape it securely.

**Connect** the other end of the ground wire to the left side of the board with a crocodile clip.

**Connect** the other end of this crocodile clip to both the ground wire, and one stripped end of your coil (left side).

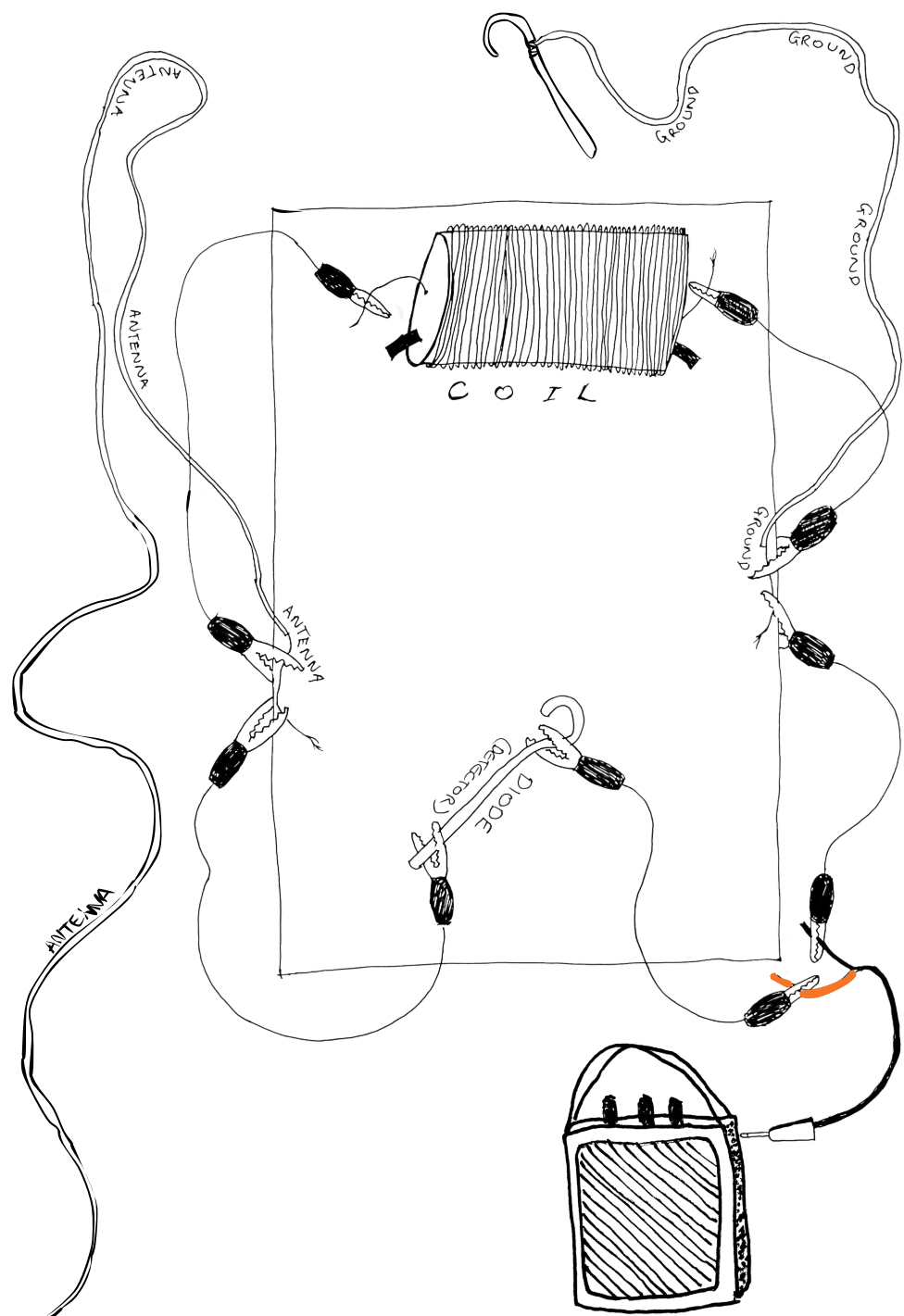
## ANTENNA

**Cut** another 5-10m wire.

**Strip** the plastic coating off 5cm at both ends.

**Connect** the stripped end to the right side of the board between the coil and the tent peg, using a crocodile clip.

**Connect** the other end of the crocodile clip to the second end of the coil (right side).



## PHONES

**Attach** a crocodile clip to each end of your mini-jack.

**Connect** the crocodile clip from the bare metal on the black strand, to the right hand side of the board. It will be connected to the antenna wire later.

**Connect** the crocodile clip from the bare wire on the red strand, to one end of your diode/second tent peg.

## DIODE

**Tape** this tent peg to the bottom-middle of the board.

## FINISHING UP

**Plug** the mini-jack into your battery-powered speaker. If you have access to a field recorder, plug this into the line-in first, then plug the speaker into the headphones output of the field recorder.

**Check** your circuit against the drawing. Every crocodile clip should be touching metal, rather than plastic or coating.

**String** your antenna as high as you can in a long line, parallel to the ground, or ask friends to form a line and hold it up.

**Drive** the tent peg attached to your ground into the earth.

**Listen** out for signals! Radio reception is strongest at dawn and dusk. Try it from the top of a hill if you can.

